

ABSTRACT

A method and system for reducing the frequency of operation for a transversal Finite Impulse Response (FIR) filter is disclosed. In the preferred embodiment, the transversal filter operates
5 in such a way that it has an even and odd row of data, which are latched on rising and falling edges of the clock respectively. This allows the clock frequency to be reduced by a factor of 2, and thus allows the use of more power efficient latches. A reduction in the frequency of operation causes the high speed latches within the transversal filter to hold the data bits twice as long as is required, which changes the desired impulse response of the FIR filter. A circuit
10 is required to select the appropriate data bits from the output of the appropriate half-speed latch, and subsequently scale it to apply the co-efficient gain. Each of the subsystems is analog, and operates in accordance with a synchronous clock system. In a more general embodiment of the invention, the data is provided to Q shift registers that operate at a clock rate which is reduced by a factor of Q.